

⑩ 日本国特許庁 (JP)

⑪ 実用新案出願公開

⑫ 公開実用新案公報 (U)

昭62-169842

⑬ Int. Cl. 4

G 06 F 3/033

識別記号

3 4 0

庁内整理番号

C-7165-5B

⑭ 公開 昭和62年(1987)10月28日

審査請求 未請求 (全 頁)

⑮ 考案の名称 移動式カーサーボインテイング装置

⑯ 実 願 昭61-55658

⑰ 出 願 昭61(1986)4月14日

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**Partial Translation of Japanese Laid-open Utility Model Application No. 62-169842**  
**Movable Cursor Pointing Apparatus**  
**Publication Date: Oct. 28, 1987**

JAPANESE PATENT OFFICE

Publication of Japanese Laid-Open Utility Model

Japanese Laid-open Utility Model Application No. 62-169842 (A)

Publication Date: Oct. 28, 1987

**TITLE OF THE INVENTION**

**Movable Cursor Pointing Apparatus**

Utility Model Application No.61-55658

Application Date: April 14, 1986

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[Embodiment]

The embodiment of the present utility model will be explained with reference to the accompanying drawings.

Fig. 1 is a schematic cross-sectional view of a movable type cursor pointing apparatus in relation to an embodiment of the present utility model. Fig. 2 is a diagram for explaining the conditions of an information processing apparatus body, light receiving section and modulating section.

In this embodiment, a mechanical type movable cursor pointing apparatus but an optical type or the other type cursor pointing apparatus can also be introduced.

In figures, numeral 1 designates a hard rubber ball having the role of transmitting movement of the movable type cursor pointing apparatus itself to the inside of the movable type cursor pointing apparatus. Numeral 2 designates a digital counter which detects the movement of the ball 1 by converting it to a digital amount from two orthogonal directions to realize transfer of movement of ball 1 to the counter. Numeral 3 designates a button and numeral 4 designates a switch for detecting movement of the button 3. The button 3 may be provided as a single button or may be in the plural number. Numeral 5 designates an infrared beam emitting section/modulating section and is represented by the well known unit. Numeral 6 designates a battery for driving the movable type cursor pointing apparatus as a whole. Moreover, numeral 7 designates an information processing apparatus and numeral 8 designates an infrared beam receiving section/demodulating section.

The information transmitting means is structured by the infrared beam emitting

section/modulating section 5 and the infrared beam receiving section/demodulating section 8.

With the structure as explained above, information generated by the digital counter 2 or switch 4 is converted to the infrared beam modulated by the infrared beam emitting section/modulating section 5 and is then received by the infrared beam receiving section/demodulating section 8 and finally transferred to the information processing apparatus.

Therefore, wireless operation can be realized to improve manipulation characteristic. [Effect of the Utility Model]

As explained above, the movable type cursor pointing apparatus of the present utility model comprises a means for detecting two-dimensional movement on the horizontal plane, a means for detecting movement in terms of the digital amounts for two orthogonal axes, single or a plurality of buttons, a means for detecting that the button is depressed and an information transferring means for transmitting the digital amount of movement and button depressing information to the information processing apparatus, whereby the information transmitting means is structured by the infrared beam emitting means, means for modulating the infrared beam on the basis of the transmitting information, infrared beam receiving means and infrared beam demodulating means and the movable type cursor pointing apparatus as a whole is driven by a battery. Therefore, wireless operation can be realized and manipulation characteristic can also be improved.

#### 4. BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 a schematic cross-sectional view of the movable type cursor pointing apparatus in relation to an embodiment of the present invention. Fig. 2 is a diagram for explaining the condition of the information processing body, light receiving section and modulating section.

- 1. ....Rubber ball; 2.....Digital counter;
- 3.....Button; 4.....Switch;
- 5.....Infrared beam emitting section and modulating section;
- 6.....Battery;
- 7.....Information processing apparatus;
- 8.....Infrared beam receiving section and demodulating section.